

SECTION L - INSTRUCTIONS, CONDITIONS AND NOTICES TO OFFERORS

ATTACHMENT L-3 – REPRESENTATIVE SAMPLE TASK

SAMPLE TASK FOR THE NATIONWIDE IDIQ “SMALL BUSINESS SET-ASIDE” RFP

1.0 Sample Task Description

This is a fictitious task to be performed at a fictitious U.S. Department of Energy (DOE) River Area Field Test Laboratory (RAFTL) (See Figure 1), located 20 miles northwest of Chicago, Illinois. The task involves 1) removal of a facility that has radiologically contaminated areas, clean areas, and contaminated soils; and 2) remediation of an area with soil and groundwater contaminated with hazardous contaminants (volatile organic compounds [VOCs]).

2.0 Performance Requirements

The IDIQ contractor is responsible for completing the following activities in support of Department of Energy (DOE) objectives, which are:

- restore lands for industrial reuse;
- protect and/or reduce impacts the environment and human health; and
- safely remove mission surplus(or excess) facilities, those facilities DOE deems no longer needed to accomplish DOE's mission
- treat, store and dispose of all waste material within all federal and state regulatory requirements.

The period of performance is not to exceed thirty months.

Government Furnished Services and Items (GFSI) include NEPA documentation (outside of the Comprehensive Environmental Response, Compensation, and Liability Act [CERCLA] process), office space (including computer hookup and excluding phone landlines), utility hookups for trailers and specialized equipment; previous site characterization and monitoring data; pending regulatory decisions and/or project phase approval decisions (See Section 3.0, 2; Sections 4.3.2 and 4.3.4; and Sections 5.3.2 and 5.3.4); basic site security (site access control). No government-furnished property, other than the items indicated above, is intended to be provided for the Sample Task. Any equipment purchased specifically for the task, and charged to the task, shall become the property of the government and be managed in accordance with FAR 52.245-1, Government Property.

Additional details regarding specific task objectives are provided in the scope descriptions.

3.0 General Background

1. River Area Field Test Laboratory (RAFTL), located on approximately 320 acres in Lake County, 20 miles northwest of Chicago, Illinois, was developed as a remote site to conduct material science research development and non-destructive and destructive testing of research and commercial nuclear fuel specimens. The site is managed by an M&O contractor for the Department of Energy.

The terrain is gently rolling, partially wooded former prairie and farmland. The grounds contain a number of small ponds and streams. The principal stream is Deerfoot Creek, which runs through the site in a southerly direction and enters the Small Bear River about 1.3 miles southeast of the center of the site. There are no other streams besides Deerfoot Creek on the site.

The geology of the area consists of about 100 feet of glacial drift on top of nearly horizontal bedrock consisting of shale underlain with older dolomites and sandstones. The glacial drift

sequence is predominantly fine-grained clayey material but also contains sandy, gravelly or silty interbeds that may contain groundwater. Some of these layers are interconnected and provide a path for groundwater migration, while others are isolated and have limited potential for movement.

The dolomite, which is approximately 200 feet thick in the RAFTL area, is an aquifer used locally as a water supply, including drinking water, for low-capacity wells. Transmissivity values in the dolomite are typically 6,000 to 8,000 gallons per day per foot. The uppermost layers of the dolomite bedrock are known to be weathered in the vicinity of the site. Groundwater flow in this aquifer is primarily south to southeastward. This groundwater is considered Class I (highest quality).

No tectonic features within 50 miles of the site are known to be tectonically active.

No federally or state-listed threatened or endangered species are known to be present on the site or in its vicinity.

The average monthly and annual wind roses at RAFTL, at the 200 foot level, are shown on Figure 2. Average temperature and precipitation are shown in Table 1.

2. RAFTL is divided into two administrative areas; Area A where previous research was conducted using both hazardous and radiological materials; and Area B where the Material Research Building (MRB) containing the Fuel Specimen and Material Research Hotcell Facility (FSMHF) is located

In 2006, an investigation into routine environmental monitoring results in Area A confirmed that groundwater contaminated with VOCs is present on the site but limited to Area A. The source of the contamination is suspected to be historic spills, leaks and disposal practices associated with previous waste storage operations in that area. No evidence exists of contamination of the dolomite aquifer below the site; however, in February of 2008, the site was placed on the CERCLA National Priorities List. A Federal Facility Agreement (FFA) is being negotiated among DOE, the Environmental Protection Agency, and the State of Illinois. The site has completed its initial investigations of soil and groundwater in the area pending finalization of the FFA.

3. In 1963, the FSMHF in F-wing of MRB opened for operations. In 2005, research and development (R&D) work at FSMHF was terminated. The facility no longer functions to support R & D mission, and the entire MRB is excess to DOE needs. During operations, the FSMHF was formerly a Category 2 Nuclear Facility, but is now less than a Category 3 facility. Off-site shipment of materials inventory and stored wastes from the FSMHF was completed in 2007. The remaining contamination in the FSMHF resulted in the facility being downgraded to a radiological facility. Operations in the FSMHF are now limited to those activities necessary for S&M. The other wings of the MRB are not nuclear facilities and, based on prior use, are not radiologically contaminated. Screening samples indicate that the FSMHF has contributed to localized soil contamination.

The M&O contractor continues to conduct research in Area B. The M&O contractor is responsible for site wide infrastructure operations, and occupies an office building in the vicinity of the FSMF and the site contains two major onsite roads maintained and used by the M&O contractor also. The M&O contractor provides access to utilities including electrical and water for dust or fire suppression, steam, and communications systems at no expense. There is an occupied office building and a new research building in the vicinity of the FSMHF (Figure 3) as well as two major onsite roads.

Deleted: of the site and is responsible for site-wide infrastructure operations.

4. DOE relationships with the stakeholders (regulators and local community) are cordial but guarded. DOE wants to avoid negative perceptions arising from the presence of a previously unidentified groundwater plume.
5. The closest direct access to a railroad is approximately 20 miles away.
6. The stratigraphy of the soil beneath the site is made up of a 60 to 65ft. thick layer of fine-grained, predominantly clayey glacially deposited till materials situated above dolomitic bedrock with a soil density of approximately 110 pounds per cubic foot.

4.0 Area A – Contaminated Soil and Groundwater

4.1 Area A History

Onsite access to Area A is restricted by an additional security fence. The area is considered an industrial/commercial land use type now and in the foreseeable future. Historical operations in Area A of the site involved the storage and use of volatile organic compounds (VOCs). In the past, Area A also was used for uncontainerized land disposal of various chemical wastes including VOCs. This practice continued until the mid-1960s. As a result, there is a region of contaminated soil in this area that is a source for groundwater exhibiting dense non-aqueous phase liquid (DNAPL) characteristics.

4.2 Area A Stratigraphy and Groundwater Background

The glacial till in this area is composed of two distinct layers representing two separate glaciations. The upper layer consists primarily of fine-grained clay and silt, with coarse-grained zones interspersed within the clay matrix. The lower layer rests on the dolomitic bedrock and has larger, more extensive coarse-grained units. Some of the coarse-grained units in both layers are saturated with groundwater. The occurrence of coarse-grained units varies significantly from borehole to borehole. Most of the saturated coarse-grained units appear to contain perched groundwater that is migrating primarily downward. Some of the large units may be hydraulically connected over portions of the site. The uppermost contiguous aquifer is in the weathered zone directly above the dolomitic bedrock, approximately 60-70 ft below ground surface (bgs).

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An extensive region of soil and shallow groundwater in Area A is contaminated with high levels of VOCs. Soil and groundwater sampling locations are shown on Figure 12. The lateral extent of VOC soil contamination is shown on Figure 13 (note: lateral extent shown is regardless of depth). Vertical extent of soil contamination was limited to ten feet or less below ground surface (bgs) across much of the site; exceptions also are shown on Figure 13. Table 4 shows the maximum detected values of VOCs in subsurface soil samples as well as assumed soil cleanup criteria based on State criteria.

The current groundwater monitoring system consists of 34 wells, many of which were constructed in soil borings created by the subsurface soil sampling process. Thirty of the wells are completed in various porous glacial drift layers less than 38 ft. deep. Four wells are completed in the dolomitic aquifer about 70 ft. deep: wells MW011 and MW012 shown on Supplemental Figure 1, Plot of Cross- Sections, Supplemental Figure 2, Cross-Section B-B, and Supplemental Figure 3, Cross-Section E-E are outside of Area A. Investigations identified groundwater contaminated with volatile organic compounds (VOCs), primarily benzene, carbon tetrachloride, and chloroform (Table 5), at depths ranging from 20 to 30 feet bgs in the glacial drift but above the underlying dolomite aquifer (Figure 14). The plume concentrations have remained constant with seasonal variations up to 30 percent lower than the maximum concentrations presented in Table 5. There is no evidence of groundwater contamination in the dolomite aquifer (onsite or offsite) and only limited contamination in the offsite glacial drift.

4.3 Area A - Contaminated Soil and Groundwater Scope

The Contractor shall perform services including, but not limited to, remediation of contaminated soil and groundwater as required; waste management including offsite disposal of all hazardous waste; and preparation of all associated project and regulatory documentation and public outreach planning to support DOE at River Area Field Test Laboratory (RAFTL) site. All work shall be conducted in accordance with the requirements of this Task Order and the requirements of the basic contract.

The required end state is development and implementation of a remediation strategy associated with soil and groundwater contaminated with volatile organic compounds (VOCs).

The regulators will require that the site remove contaminated soil in accordance with assumed cleanup objectives (and dispose the soil offsite at a properly permitted disposal facility) and achieve Illinois Class 1 organic standards for groundwater at the site boundary. Current maximum soil and groundwater contaminant levels as well as assumed cleanup objectives are shown respectively in Tables 4 and 5. The approximate extents of soil and groundwater contamination are shown in Figures 13 and 14. The Illinois Class 1 Organic standards are provided in Table 6.

4.3.1 Contaminated Soil and Groundwater Task Order Completion Criteria

Task order completion will be achieved when the following are accepted by DOE as complete:

- A soil and groundwater remediation strategy has been developed and implemented in Area A and has been found acceptable to DOE, the Environmental Protection Agency (EPA) and the State of Illinois.
- All final reports have been completed and approved by DOE.

4.3.2 Contaminated Soil and Groundwater Scope

The Contaminated Soil and Groundwater Scope includes the following:

- Regulatory report writing under CERCLA
- Removal and offsite disposal of contaminated soil;
- Implementation of identified groundwater strategy;
- Support to DOE in regulatory interactions, Record of Decision development, and public outreach activities; and
- Preparation of documentation required for project management under DOE Order 413.3A and standard practices, including the following:
 - performance baseline
 - resource-loaded schedule
 - risk management plan
 - hazard analyses
 - health and safety plan
 - quality assurance plans
 - final project report including lessons learned (end of project)
 - waste manifests (during project execution)

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Evaluation/Cost Analysis ¶
... Risk Assessment ¶
... Feasibility Study¶
... Remedial Action Plan¶
... Public outreach plan¶

- formal monthly project status reporting including earned value reporting (during project execution)

NOTE: For purposes of the sample task only, it is expected that the Offeror will provide a listing and summarized contents of the above listed required documents.

4.3.3 Environment, Safety and Health Requirements

DOE's cleanup goals for chemical remediation are as follows:

- Reduce cancer risk to 1×10^{-4}
- Reduce non-cancer risks to a Hazard Index of 1
- Lower of Maximum Contaminant Levels (MCLs) or other drinking water levels (Illinois Class I standards) based upon toxicity, taste and odor

4.3.4 Summary of Assumptions regarding the Soil and Groundwater and Area A

- Area A will be cleaned using the CERCLA process.
- The area is considered an industrial/commercial land use type now and assumed to stay the same land use for the foreseeable future.
- Assume that contaminated soil must be removed in accordance with assumed soil cleanup criteria (Table 4) and disposed at a properly permitted disposal facility.
- Assume that groundwater must be cleaned up to achieve Illinois Class 1 organic standards for groundwater at the site boundary. The Offeror may propose a strategy of its choice to achieve this objective.
- Assume and show in the schedule a week for the required DOE Independent Project Review (IPR) of the project baseline and associated documentation prior to DOE approval of combined Critical Decisions 2/3 (baseline approval and start of execution phase), in accordance with DOE Order 413.3A. Assume that the project baseline and all supporting documentation must be provided to DOE a minimum of one week before the IPR is held.
- Assume and show in the schedule that draft regulatory documents must be submitted to DOE for review and probable revision by the contractor, prior to DOE's submittal to the regulators.
- Assume a minimum of two weeks for DOE review of draft documents and a minimum of 30 days for regulatory review and approval of revised documents including DOE's submitted Record of Decision.
- Assume that the all structures above or below ground, except for fencing, have been removed.
- Assume that there are no structures (other than fencing), no above and below ground utilities, landfills, Underground Storage Tanks (USTs) or other appurtenance present in the vicinity of the soil and groundwater contamination.
- Assume soil will need to be brought onsite from an outside source for backfilling excavations.

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- Assume that Area A soil and groundwater is not radiologically contaminated.
- Assume that there are no storm or sanitary sewer lines in Area A.
- Assume the entire pipeline has been removed in Figure 12.
- Assume that Deerfoot Creek will not need to be rerouted or characterized.
- Assume that Figures 13 and 14 accurately reflect the soil VOC concentrations and the approximate lateral extent of groundwater contamination and also, no additional site characterization is necessary. The need for additional characterization, sampling or modeling may depend on the offerors technical approach.
- Assume there are no structures located within the area of the contaminated soil shown in Figure 13, Total Soil VOC Concentrations and depths.
- Assume that Volatile Organic Compounds (VOCs) are the only contaminants of concern in Area A.

5.0 Area B – Material Research Building and former Fuel Specimen and Material Research Hotcell Facility

5.1 Material Research Building Background

The MRB (See Figure 4) is a 2-story building with 8 wings (identified as A-Wing through H-Wing). There is an underlying below grade tunnel and storage area, including significant areas of fill (see appended as-built drawings). The MRB is primarily constructed of concrete floors, brick exterior walls, masonry interior walls, and a composite roof covering a concrete roof deck. The roof slab is supported by reinforced concrete and steel beams. All the wings of the MRB complex have a basement of comparable depth to the F-Wing basement. The facility is equipped with a lightening protection system consisting of roof top air terminals connected to conductors connected to ground. HVAC systems are described in Supplemental Figures 9 through 53.

Several items that provide support to MRB are located outside the building footprint such as a diesel generator and electrical power substation, as shown on Figure 11 (note: nitrogen tanks have been removed). The fuel tank for the diesel generator is a 500 gallon, 3/16" steel tank which is empty. Other support systems are located within the MRB but outside the FSMHF footprint such as steam and water. The Fire Suppression System is located in the basement of the MRB, which operates throughout the MRB except for the Hot Cells. Electrical power and communications systems are throughout the entire MRB. The MRB is serviced by many site-wide systems such as steam, water, electrical power and communications. FSMHF and associated office support space is about 6.5% (20,000 ft²) of the total MRB space (304,572 ft²) (the actual hot cell is approximately 12,500 ft²).

Each floor of the MRB (basement, ground floor and second floor) has a sprinkler system equipped with an isolation valve and water flow switch. These automatic wet pipe systems protect most areas of the building except for the FSMF Hot Cell itself and Rooms F-203 and F-204. The sprinkler systems are equipped with ordinary temperature, standard spray, quick-response sprinklers designed to operate and release water when the heat-sensitive element reaches a temperature of 165 degrees Fahrenheit. The flowing water activates the associated sprinkler system water flow switch connected to the fire alarm system to provide notification to building occupants, if any, and to the Fire Department.

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The MRB consists of multiple wings:

A-Wing 1st floor contains offices and a large conference room (A-157). A-Wing 2nd floor contains offices.

B-Wing 1st floor contains a building maintenance shop, offices, a lunchroom, and a locker room. B-Wing 2nd floor contains large locker rooms and a conference room.

C-Wing 1st floor contains offices, clean (uncontaminated) labs, training classrooms, and service areas. C-Wing 2nd floor contains offices and clean (uncontaminated) labs.

D-Wing 1st floor contains clean (uncontaminated) labs, offices, storage, and service areas.

D-Wing 2nd floor contains offices and computer labs.

E-Wing 1st floor contains service and storage areas. E-Wing 2nd floor contains offices and clean (uncontaminated) labs.

G-Wing 1st and 2nd floors contain offices and clean (uncontaminated) labs.

H-Wing 1st and 2nd floors contain (uncontaminated) office spaces.

The MRB as a whole is known to have asbestos floor tile including asbestos mastic in laboratories, offices, corridors, and similar areas on the ground floor outside of the FSMHF area. The Offeror should assume that 200,000 square feet ~~of non-radiologically contaminated~~ asbestos tile and mastic needs to be removed from the MRB. No other ACM containing material is present in the MRB. Sampling has not found any evidence of lead-based paint within the MRB, including the FSMHF.

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5.2 Fuel Specimen and Material Research Hotcell Facility Background

The FSMHF, located in the F Wing, is a radioactively contaminated facility consisting of a very large hot cell facility; a materials fabrication area, which contains small hoods and lab space that were used for alloy preparation and casting, secondary fabrication, assembly and welding, and inspection services, and support gloveboxes, including shielded gloveboxes; a “Hot Machine Shop” for machining low-level contaminated or activated mechanical test specimens; the Electron Beam Laboratory (EBL); a decontamination repair area adjacent to the hot cell, and surrounding office space. All rooms in wings A-H are empty except as otherwise specified in the sample task. All wings, excluding F, are free of radiological contamination.

The materials fabrication area includes the Electron Beam Laboratory (EBL) (Rooms F-117, F-117A, F-118, and F-188A) and the former “Hot Machine Shop”, also referred to as General Purpose Shop (Room F-109). There are no other residual equipment or machine tools in the EBL beyond what is listed below. The Hot Machine Shop (Room F-109), was previously cleaned up for re-use and still contains two small hoods that survey below radiological free release criteria. These two small hoods are 24 inches wide by 25 inches deep by 32 inches high.

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The FSMHF is primarily a steel and concrete structure containing former operating areas, service areas, offices, and personnel access areas (See Figures 8, 9,10). The FSMHF was designed to perform research and development of nuclear reactor fuel components and materials, including handling, machining and polishing of plutonium and uranium. There was no particular history of use of toxic chemicals

A brief description of the rooms within the facility (as shown on Figure 5) is as follows:

F-101	Access corridor to the facility
F-102	Exit access corridor
F-103	Office
F-104	Men's rest room
F-105	Storage area (deactivated emergency decontamination shower)
F-106	Work space; provides access to Decontamination Repair Area (DRA) and equipment decontamination stalls
F-107	Corridor connecting F-106 and F-113 with access doors to F-101 corridor
F-109	General purpose shop (Hot Machine Shop)
F-110	Cell workstation and associated support area
F-111	Connecting space between Rooms F-106 and F-110
F-112	DRA work area
F-113	Cell workstation and associated support area
F-114	Ante-room, provides access to Cell F-131
F-115	DRA, provides access between Cell F-132 and DRA glovebox
F-116	Three stalls consisting of pump stall, filter stall, and spray chamber
F-117	Glovebox room
F-117a	Former Scanning Electron Microscope (SEM)
F-118	Former Microprobe Analyzer
F-118a	Former Auger Scanning Microprobe Room
F-118b	Storeroom with sink
F-118c	Radiation survey and step-off area, and former Microprobe computer
F-120a	Janitor's closet
F-121	Exit access corridor

F-122-127	Offices
F-131	Cell, subdivided by a gloved glass wall. Access to the clean side permitted repair activities to be conducted on equipment through the glove wall.
F-132	Former test room (workstation 9)
F-133	Clean Transfer Area
F-134	Sample verification and photography room
F-135	Cutting, grinding and polishing workstations
F-136	Waste inventory and packaging

Although stored radioactive wastes and materials already have been removed, the FSMHF hot cell contains significant amounts of contamination that needs to be addressed prior to demolition of the MRB.

The levels of contamination vary from area to area within the facility. The FSMHF was used for storage, as well as industrial, chemical, and radiological processes and testing. Known radiological risks at the FSMHF include, but are not limited to, cesium 137, with smaller amounts of americium 241, plutonium 238, and cobalt 60. There are trace amounts of bismuth 214, which can be ignored for this task. Chemical hazards at the FSMHF include lead shielding and zinc bromide. The lead shielding consists of loose bricks and pots estimated at less than one cubic meter (35 cubic feet) stored in the facility. Loose bricks were used for temporary gamma shielding. Lead pots were used for shielding of sources and specimens. Neither the bricks nor the pots are radiologically contaminated. Radiation levels in the hot cell range from background to about 20 mR/hour. Surface scans identified contamination in the range of thousands to hundreds of thousands of dpm/100 cm² beta/gamma and hundreds to thousands of dpm/100 cm² alpha contamination. Surface smears indicate loose beta/gamma of 800 to 100,000 dpm/100 cm² and loose alpha contamination of 50 to 1000 dpm/100 cm². Survey results, where available, are noted for specific locations within the hot cell and associated areas.

The hot cell proper is equipped with remote handling equipment and a specialized containment system to provide a safe handling environment to facilitate work on hot materials.

The hot cell walls, ceiling and floor are made of steel-encased magnetite concrete with steel reinforcing bars and are approximately 2 ft. to 3 ft. thick. There are four external shielding doors: Door 1, the door into the CTA from F-113; Door 2, the door between F-115 (DRA) and F-132 (Workstation 9); Door 3, the door into the Glove Repair Area (GRA)(F-131); and Door 10, the door in F-204 over the equipment hatch. Two of the doors (Doors 2 and 3) are made of 1 ft thick steel. Door 1 is made of steel-encased magnetite concrete with a total thickness of 3 ft. Door 10 (the horizontally mounted hatch shielding door in the ceiling) is made of a 23.25 inch steel shell enclosing concrete. Steel shield doors and transition areas separate Area 1 and 3. The wall between Areas 1 and 3 is made of magnetite concrete encased in steel. The barrier wall separating the CTA from Area 3 consists of stainless steel and laminated safety glass. This wall contains glove ports, push-throughs, bag ports, and other means to transfer areas in or out of Area 3. The other internal doors and walls are primarily made of steel.

There are twelve hot cell windows in Areas 1 and 3 with a combined volume of approximately 2,500 gallons of zinc bromide solution. Each hot cell window consists of a carbon steel shell with

laminated safety plate glass on either side. The glass is sealed against the steel frame using a gasket. The inside of each window cavity also has safety glass sealed to the walls as physical protection for the inner tank glass. The steel frame is grouted to the hot cell for structural integrity. There are other penetrations through the FSMHF walls and ceilings for electrical leads and manipulators.

Area 2 contains storage tube assemblies in fixed position wells in the floor of the cell. There are a total of thirty-four, 4in. diameter tube assemblies in one array and thirteen, 6 in. diameter tubes in another array. The openings of the storage tubes are about 2.5 in. above the floor level and the storage tube wells extend to 8 ft. below the floor. A steel floor plate is placed over the trench and around the storage tubes. Each tube assembly includes an integral steel plug at least 1 in. thick. No samples or other stored materials remain in the storage tubes. Swab surveys of the storage tubes showed negative results for loose activity. Each of the storage tubes also was surveyed down its length and all 47 tubes showed evidence of activation or internal contamination (140 to 2500 $\mu\text{R}/\text{hour}$).

Of the areas outside the hot cell, Figure 8, Area 4 is part of the main floor area of the FSMHF. Offices are along the south side (F-122 to F-127) and F-102 and F-112 are hallways. The EBL used to contain a shielded electron microprobe (F-118), a scanning electron microprobe (F-118A), a glovebox and two shielded gloveboxes for sample preparation (F-117), and two gloveboxes (F-118 and F-118a). Both microprobes have been removed and relocated to another facility, but the other components remain. Smears of the two shielded gloveboxes showed moderately high levels of beta/gamma contamination on the front surface (17,000 dpm/100 cm^2) and interior floor (9000 dpm/100 cm^2). Full scans for total surface activity of the shielded gloveboxes showed high levels of contamination, up to 400,000 dpm/100 cm^2 beta/gamma and 500 dpm/100 cm^2 alpha. Smears of the other three gloveboxes indicated beta/gamma levels of 2,000 to 5,000 dpm/ cm^2 and 200 to 600 dpm/ cm^2 alpha.

The DRA, in Area 6 (see Figure 8), provided an area for wet decontamination of moveable equipment and components. The average net surface activity is about 90,000 dpm/100 cm^2 beta/gamma and 500 dpm/100 cm^2 alpha contamination. Smears show generally low levels of loose contamination on most surfaces (up to 5,000 dpm/100 cm^2 and loose alpha contamination of up to 50 dpm/100 cm^2). The areas between Rooms F-115 and F-116 have north and south outer walls shielded with the equivalent of 4 inches of steel. All other parts of the DRA are unshielded. The DRA operates at a negative pressure for contamination control. The exhaust system has dual high efficiency particulate air (HEPA) filters. Water from the spray system was collected in a decontamination liquid storage tank.

Second-floor areas include a mechanical equipment and storage area (F-201); a fan loft (F-202) to house facility exhaust systems, nitrogen distribution piping, stack monitors, and a bridge crane that travel between F-202 and F-204; the plug access room (F-203) that contains shield plugs that communicate with Area 1 on the first floor (plugs include power and control circuits and gas lines); the hatch room (F-204) that contains a large hatch with a shield door that communicates with Area 3 on the first floor and allows large pieces of equipment to be installed or removed from the hot cell. The hatch is sealed with aluminum covers with gasket seals. Rooms F-206, F-207 and F-208 are used for storage of spare manipulators, manipulator parts, and miscellaneous support parts and equipment for the FSMF. Second floor wall surfaces were found to be uncontaminated and floors were found to be largely uncontaminated with the exception of isolated beta/gamma hot spots (up to 10,000 dpm/100 cm^2 beta/gamma). Exhaust systems have not been well characterized but are known to contain loose alpha contamination at above 2000 dpm/100 cm^2 and beta/gamma at about 12,000 dpm/100 cm^2 .

The roof of the F-Wing supports an enclosure that houses two exhaust fans that support the Main Hot Cell Exhaust System. In addition to ventilation and exhaust systems, along with the hot cell

structure itself, the entire MRB is supported by a fire detection and alarm system and a fire suppression system.

Soil sampling was performed at six locations outside the building (See Figure 11) and adjacent to the F wing. Samples were taken within a ten foot distance from the building, and at depths ranging from 3 to 10 feet. All soil samples contained significant amounts of cesium 137 (up to 680 pCi/g), and several contained cobalt 60 (up to 243 pCi/g at location 5) and Americium 241 (up to 860 pCi/g at location 5). The source, route and extent of this contamination have not been defined but may be associated with unidentified old drains or sewage pipes in the area. Contaminated soil adjacent to the building (and below the building if it occurs there) must be remediated during the project to meet site industrial land use criteria.

5.3 Area B - DD&R Scope

The Contractor shall perform services including, but not limited to, deactivation, decontamination, demolition and removal of a contaminated building and associated contaminated soil; placement and removal of construction fencing as required; waste management including offsite disposal of all low-level radioactive waste (LLW), mixed low-level radioactive and hazardous waste (MLLW), hazardous waste, and clean industrial or sanitary wastes; and preparation of all associated documentation. All work shall be conducted in accordance with the requirements of this Task Order and the requirements of the basic contract.

The required end state is removal of a contaminated facility; clean up of surrounding contaminated soils, restoration of the affected demolition and cleanup site, and offsite disposal of the resulting wastes and materials. The contractor is to apply its expertise to determine the necessary decontamination and demolition techniques, and ensure that the methods used are compliant with all applicable laws and requirements referenced in the PWS.

5.3.1 DD&R Completion Criteria

Task order completion will be achieved when the following are accepted by DOE as complete:

- FSMHF, MRB, and associated contaminated soil are removed safely and compliantly and disposed offsite.

Building removal includes removal of all associated building utilities, equipments, drains, piping, and structures (including footings and foundations). The final excavation will be subject to an Independent Verification Survey prior to backfill and site restoration.

- The building excavation and other disturbed areas are restored to grade, properly compacted, and reseeded with native vegetation.
- The project goal at close of remediation is to achieve a maximum future R&D worker dose not to exceed 15 mrem/yr, assuming up to 2000 hours of exposure per year from residual radioactive contamination left in the soil.

5.3.2 DD&R Scope

The DD&R scope includes the following:

- Preparation of required project documentation in accordance with DOE Order 413.3A and standard practices, including but not limited to the following::

- performance baselines;
 - resource-loaded schedules;
 - risk management plan;
 - hazard analyses and health and safety plan;
 - radiation control plan, including As Low As Reasonably Achievable (ALARA) analyses;
 - quality assurance plan;
 - decontamination plan;
 - demolition plan;
 - air permits as required for selected demolition approach (prior to demolition);
 - final status survey plan (prior to Independent Verification survey);
 - final status survey report (prior to Independent Verification survey and site restoration);
 - final project report including lessons learned (prior to project completion);
 - waste manifests (during project execution); and
 - formal monthly project status reporting including earned value reporting (during project execution).
- deactivation, demolition and removal of contaminated facilities associated with the FSMHF;
 - removing all radioactively contaminated equipment and space; decontaminating the structures as necessary for safe demolition;
 - decontaminating and removing gloveboxes and experimental equipment as necessary to support demolition;
 - excavation, removal and offsite disposal of contaminated soil associated with the building, in accordance with provided assumptions;
 - completing demolition of the entire building including the hot cell and associated lab and support space, non-contaminated facilities associated with the balance of the MRB, and offsite disposition of all wastes, excess materials, and debris;
 - completion of final status surveys (using the Multi-Agency Radiation Survey and Site Investigation Manual [MARSSIM] protocols) in advance of Independent Verification Surveys (arranged by DOE) prior to site restoration
 - removal of all temporary fencing and equipment required for execution of the task; and
 - restoring the building excavation and other disturbed areas to grade, properly compacted and reseeded with native vegetation.

Under the Task order, the Contractor shall provide any associated reports that are determined by the Offeror to be applicable for DD&R of contaminated excess facilities and the other documents/reports, as summarized above. For purposes of the sample task, it is expected that the Offeror will provide a listing and summarized contents of the required documents.

NOTE: DOE is not specifying a particular technical approach to this scope. The Offeror should propose a technical approach for safe and cost-effective execution of project scope.

5.3.3 Environment, Safety and Health Requirements

If the Offeror intends to dispose of materials as non-radioactive waste, then building materials may be radiologically released to the following criteria and confirmation sampling in accordance with MARSSIM would need to be proposed:

- Surface contamination below the values in DOE 5400.5, (2-8-90), "Radiation Protection of the Public and the Environment. Figure IV-1 Surface Contamination Guidelines.
- Direct exposure pathways at or below 20 μ rem/hr greater than RAFTL site average background levels of 87 (+/- 3) mrem/year.

The project goal for members of the public is a dose not to exceed 10 mrem/year as a result of airborne emissions during demolition.

Industrial land use-derived soil concentration guidelines for remediation of contaminated soil associated with the FSMHF are shown in Table 3.

5.3.4 Summary of Assumptions regarding the DD&R and Area B

- An Environmental Assessment has been prepared, using broad bounding assumptions regarding transportation of wastes and airborne emissions during demolition (up to 10 mrem/year to a member of the public during demolition), and a Finding of No Significant Impact has been approved.
- MRB should be cleaned up under DOE Orders and best management practices.
- The MRB will not be cold and dark (defined as separated from the site infrastructure system such as steam, water, electrical power, and communications systems) when it is delivered to the contractor. Utilities are to be removed to the closest road or parking lot. The removal termination point for electrical is the Outer Circle road shown in Figures 3, 4, and 11. The removal termination point for drains, water, and steam is through B Wing to the Inner Circle Road shown in Figures 3 and 4.
- MRB does not provide electrical or other utility support to other buildings on site.
- LLW and MLLW are disposed at a commercial licensed radwaste disposal facility
- Hazardous wastes are disposed at a properly permitted disposal facility
- Clean wastes (such as non-contaminated debris) are disposed at a sanitary or industrial waste facility.
- DOE policy precludes any release of metals from radiological controls from radiologically posted areas for recycling as non-radioactive material.
- Assume that 200,000 square feet of asbestos tile and mastic needs to be removed from the MRB.
- Assume paint has no hazardous constituents (including but not limited to lead and PCBs.)
- Assume that 5,000 ft³ of contaminated soil associated with the FSMHF must be removed and disposed offsite.
- The Offeror should identify a preferred approach, in the event that additional soil volumes beyond 5,000 ft³ are required.
- The Offeror is to apply the industrial land use-derived soil limits using the sum of fractions methods as discussed in MARSSIM and may not blend soil to achieve these limits.
- Assume disposal of LLW using the current rates specified in the DOE-Energy Solutions Contract Number DE-AM24-98OH20053, as modified.

Deleted: <#>no lead-based paint

Deleted: <#>is within the MRB, including the FSMHF.¶

- Assume a week for the required DOE Independent Project Review (IPR) of the project baseline and associated documentation prior to DOE approval of combined Critical Decisions 2/3 (baseline approval and start of execution phase), in accordance with DOE Order 413.3A. Assume that the project baseline and all supporting documentation must be provided to DOE a minimum of one week before the IPR is held.
- Assume that there are no drains, open manholes, or catch basins external to the MRB that will hamper equipment movement or require protection from demolition activities.
- Assume that there are no expansion joints in the MRB.
- Assume soil will need to be brought onsite from an outside source for backfilling excavations.
- Assume that the concrete slab shown to the south of Wing F on Figures 4, 5 and 11 has already been removed.
- Assume that soils at Area B are radiologically and not chemically contaminated.
- Assume that the S&M costs for current regulatory compliance, security, and maintenance for Area A is \$1M per year. Assume that the S&M costs for current regulatory compliance, security, and maintenance for Area B is \$500,000 per year.

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6.0 Sample Task Deliverables List

	Deliverable/Milestone Description	Contract Reference	Due Date	Information or Approval	Frequency	Source
1	Integrated Safety Management System (Description)	PWS C.2	Within thirty calendar days from Task Order award	approval	once	DOE M 450.4-1, and DOE G 450.4-1B
2	Radiation Protection Program (including implementing procedures)	PWS C.2	Within ninety calendar days of Task Order award	approval	once	10CFR 835, DOE STD 1098-99 including Change 1, DOE G 441.1-1B
3	Worker Safety and Health Program (including implementing procedures)	PWS C.2	Within sixty calendar days of Task Order award	approval	once	10CFR 851, DOE G 440.1-8
4	Conduct of Operations Program	PWS C.2	Within ninety calendar days of Task Order award	approval	once	DOE O 5480.19 Change 2
5	Corporate Operating Experience Program	PWS C.2	Within sixty calendar days of Task Order award	approval	once	DOE Order 210.2
6	Environmental Protection Program	PWS C.2	Within ninety calendar days of Task Order award	approval	once	DOE O 450.1A
7	Waste Management Program	PWS C.2	Within ninety calendar days of Task Order award	approval	once	DOE 435.1 incl. Change 1, DOE M 435.1-1 incl change 1

	Deliverable/Milestone Description	Contract Reference	Due Date	Information or Approval	Frequency	Source	
8	Quality Assurance Program	PWS C.2	Within sixty calendar days of Task Order award	approval	once	ASME NQA-1 2004, including 2007 addenda for Deactivation and Decommissioning (D&D)	
9	Contractor Assurance Program	PWS C.2	Within 120 calendar days of award	approval	once	10 CFR 830.120, DOE O 414.1C, DOE O 226.1	Deleted: 10 ... [1]
10	Risk Assessment	Sample Task Section 4.3.2	Per DOE Approved Schedule	approval	once	CERCLA Regulations and Requirements	Deleted: 1
11	Feasibility Study	Sample Task Section 4.3.2	Per DOE Approved Schedule	approval	once	CERCLA Regulations and Requirements	Deleted: 2
12	Remedial Action Plan	Sample Task Section 4.3.2	Per DOE Approved Schedule	approval	once	CERCLA Regulations and Requirements	Deleted: 3
13	Public Outreach Plan	Sample Task Section 4.3.2	Per DOE Approved Schedule	approval	once	CERCLA Regulations and Requirements	Deleted: 4
14	Resource loaded schedule	Sample Task Section 4.3.2	Per DOE Approved Schedule	approval	once	DOE O 413.3A and DOE Guidance documents	Deleted: 5
15	Risk Management Plan	Sample Task Section 4.3.2; Clause H.13	Within 120 days of Task Order Award	approval	once	DOE O 413.3A and DOE Guidance documents	Deleted: 6
16	Performance Baseline	Sample Task Section 4.3.2; Clause H.13	Within 120 days of Task Order Award	approval	once	DOE O 413.3A and DOE Guidance documents	Deleted: 7
17	Project Schedule	Sample Task Section 4.3.2	Within 120 days of Task Order Award	approval	once		Deleted: 8
18	Hazard Analyses	Sample Task Section 4.3.2		information	As needed	10 CFR 851, 29 CFR 1910 and 1926, DOE STD 1120-2005	Deleted: 9

	Deliverable/Milestone Description	Contract Reference	Due Date	Information or Approval	Frequency	Source	
19	Final Project Report (Soil and ground water cleanup)	Sample Task Section 4.3.2	Per DOE Approved Schedule	approval	once	DOE O 413.3A	Deleted: 20 Deleted: CERCLA Regulations and Requirements
20	Waste Manifests	Sample Task Section 4.3.2	Day of shipment	For information	As needed	49 CFR (DOT), 49 CFR Series	Deleted: 21
21	Monthly Project Reports	Sample Task Section 4.3.2; Clause H.13	15 th calendar day each month for the preceding month	For information	monthly	DOE O 413.3A and DOE Guidance documents	Deleted: 2
22	Decontamination Plan	Sample Task Section 5.3.2	Within 120 days of Task Award	approval	once	Industry practice compliant with DOE Order 5400.5, Contractor approved RPP and WSHP, DOE STD 1120-2005	Deleted: 3
23	Demolition Plan	Sample Task Section 5.3.2	Within 120 days of Task Award	approval	once	DOE Order 5400.5, Contractor approved RPP and WSHP, DOE STD 1120-2005	Deleted: 4
24	Final Status Survey (and Confirmation Sampling and Analysis Plan)	Sample Task Section 5.3.2	Per DOE Approved Schedule	Review and Comment	once	MARSSIM	Deleted: 5
25	Final Status Survey Report	Sample Task Section 5.3.2	Per DOE Approved Schedule	Review and Comment	once	MARSSIM	Deleted: 8
26	Final Project Report (D&D)	Sample Task Section 5.3.2	Per DOE Approved Schedule	Review and Comment	once	Industry practice	Deleted: 9
27	Meeting Minutes with Regulators, Public Officials, and Public		As occurs	Review and comment	As needed	Contractor practice	Deleted: 30
28	Emergency Preparedness Plan		Per DOE Approved Schedule	Approval	Once	29 CFR 1910.120 and specifically up to 1910.120.(q)(6)iii for Hazardous Material Technician for response team capability.	Deleted: 31
29	Erosion & Sediment Control		Per DOE Approved Schedule	DOE Review and Comments, regulatory approval		Per state requirements if required	Deleted: 32

	Deliverable/Milestone Description	Contract Reference	Due Date	Information or Approval	Frequency	Source	
30	DOELAP Dosimetry Applications (includes technical basis documents, implementing procedures, and quality assurance plan)		Per DOE Approved Schedule	DOE LAP approval	If required	10 CFR 835,	Deleted: 3
31	Price Anderson Act Program		Per DOE Approved Schedule	approval	once	10 CFR Part 835	Deleted: 4
32	Waste Characterization information		Not applicable	information	Upon request	DOE 435.1, 40-C series, Disposal facility requirement.	Deleted: 5
33	Site Operations Procedures		As needed	information	Upon request	10 CFR 851, 29, 1910 & 1926	Deleted: 6
34	Work Packages		As needed	information	Upon request	Radiological Protections Plan, Worker Safety and Health Plan, Contractor requirements	Deleted: 7
35	Radiological Work Permits		As needed	information	Upon request	Radiological Protections Plan, Contractor requirements	Deleted: 8
36	Local Permits		As needed	information	Upon request	10 CFR 851, 29, 1910 & 1926, state regulations	Deleted: 9

Sample Task Figures and Tables

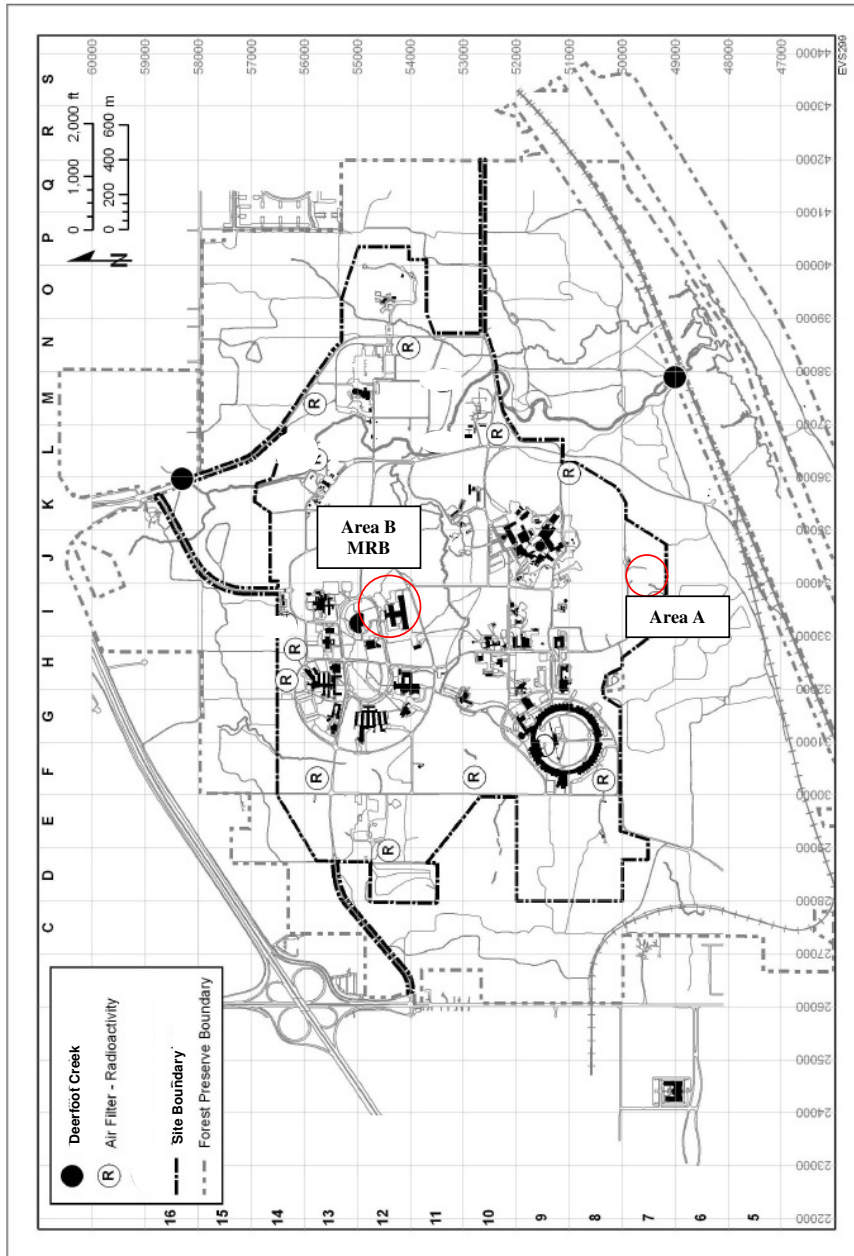


Figure 1, RATLF Areas A and B

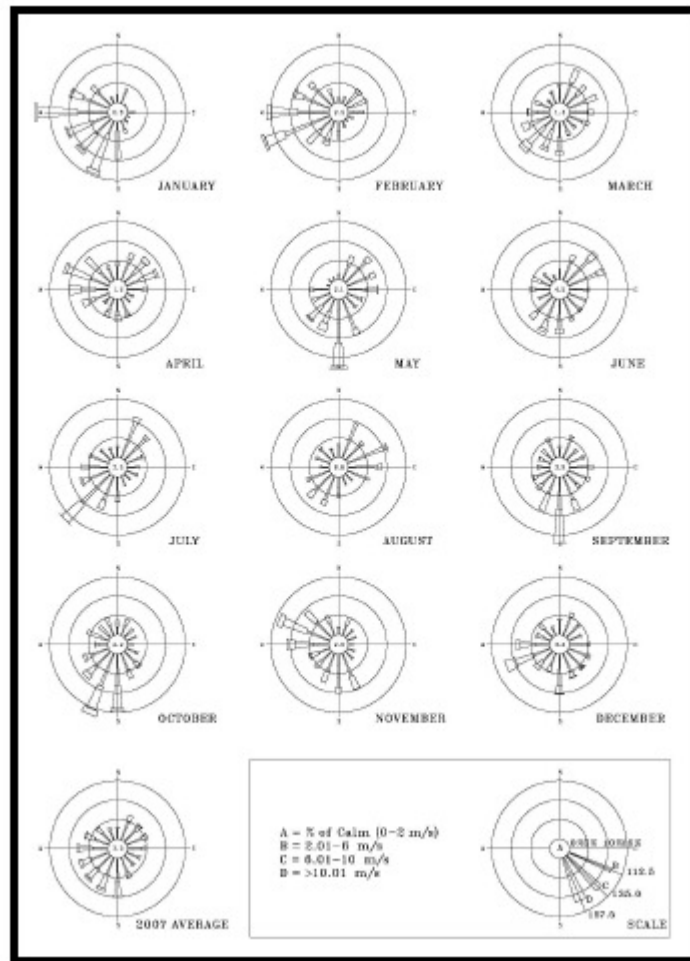


Figure 2, Monthly and Annual Wind Roses at RAFTL

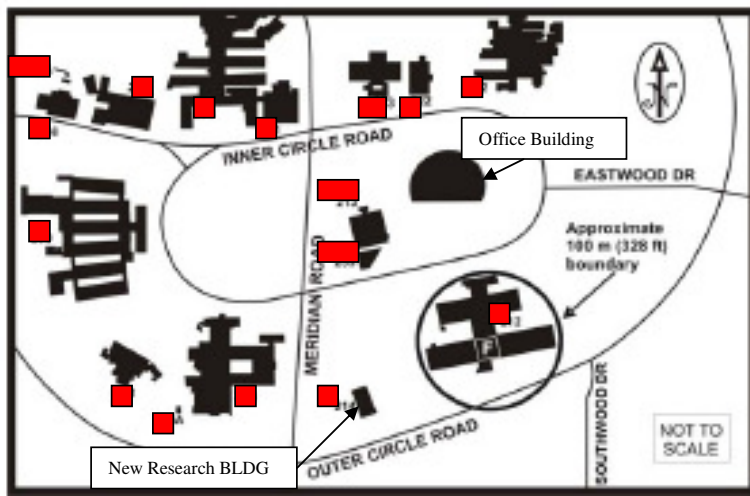


Figure 3, RATLF Area B, Location of MRB. Distance from MRB Wing F to the nearest office building is approximately 750 feet. Distance from MRB Wing F to the New Research Building is about 450 feet. Distance from MRB Wing F to the closest site boundary is about 2624 feet. (Red boxes indicate redacted information)

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Figure 4, Aerial view, MRB Building including FSMHF

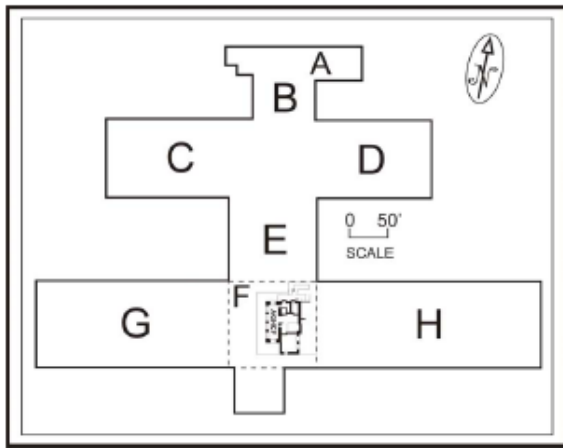


Figure 5, MRB Schematic Layout, showing location of F Wing and FSMHF

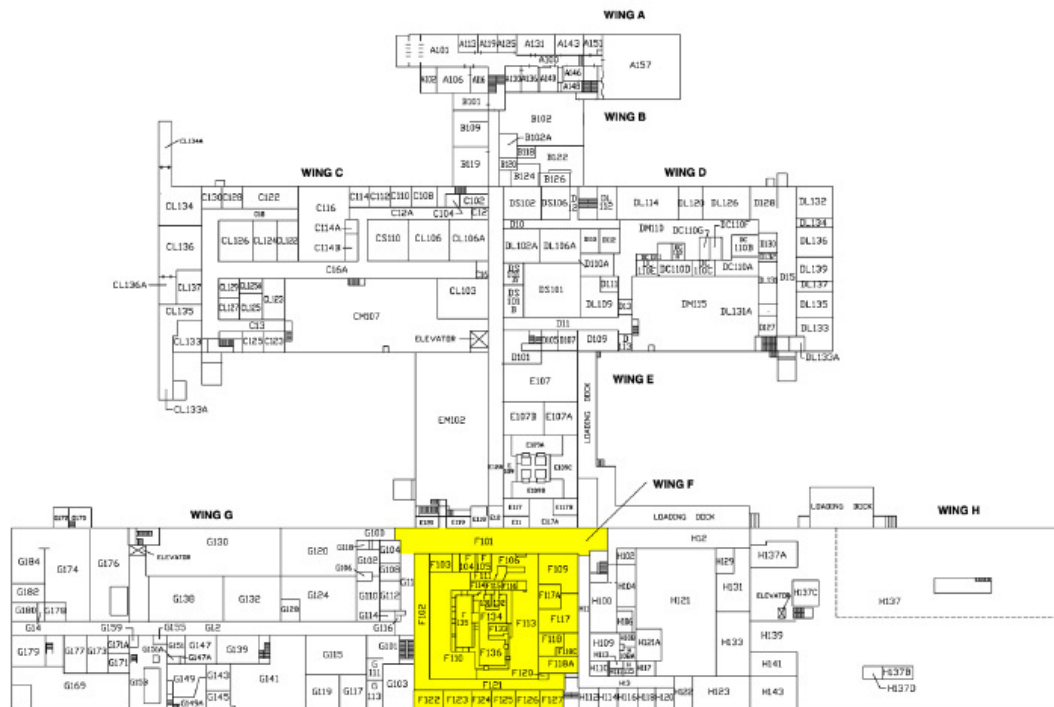


Figure 6: MRB, first floor – F Wing housing the FSMHF is highlighted (scale is 1:1200)

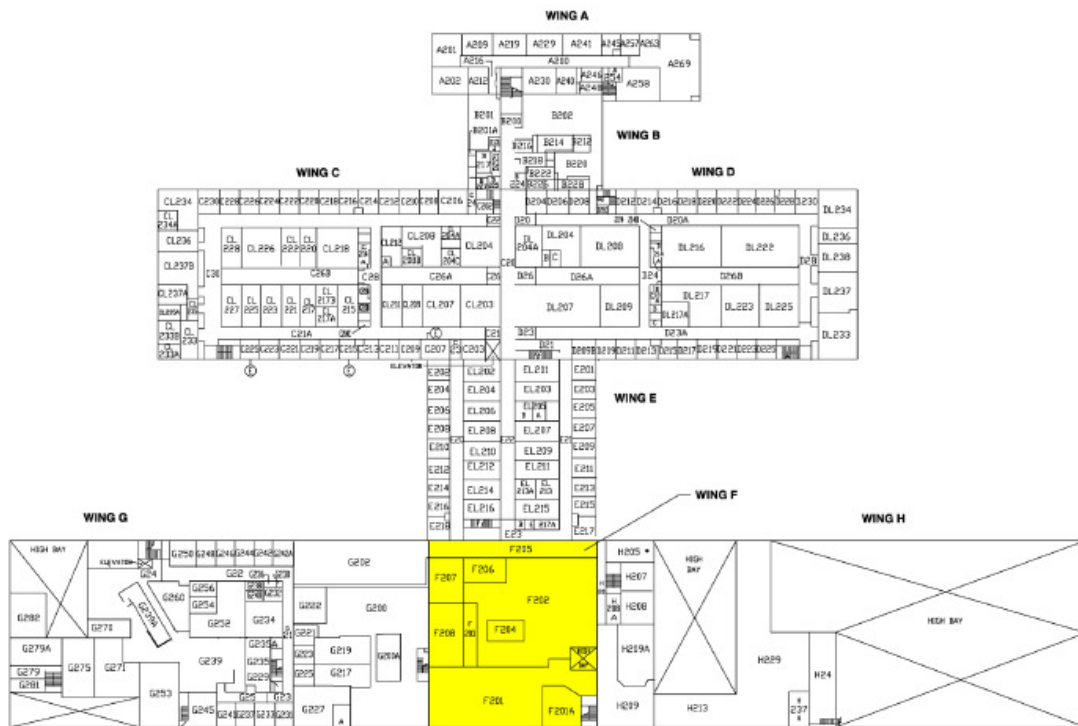


Figure 7: MRB, second floor – area above the FSMHF is highlighted (scale is 1:1200)

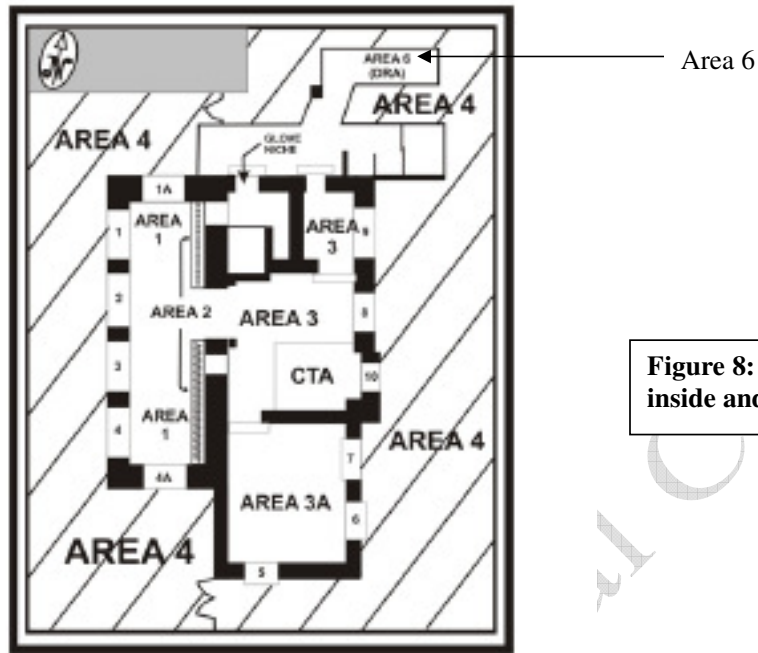


Figure 8: FSMF areas, both inside and in proximity to hot cell

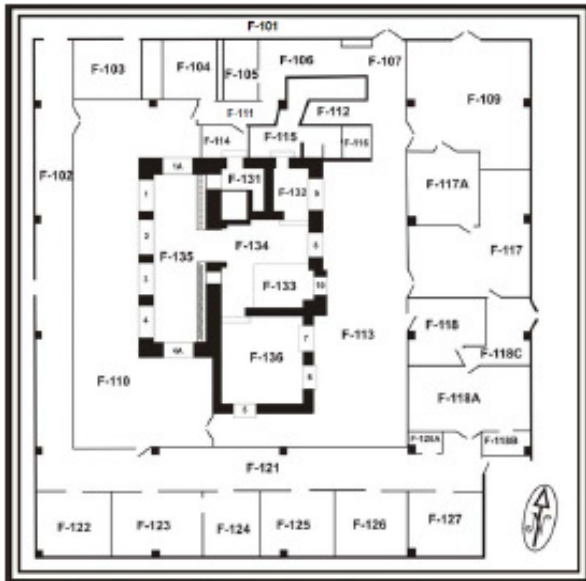


Figure 9: Detailed layout of the FSMHF first floor, hot cell and out-of-cell components

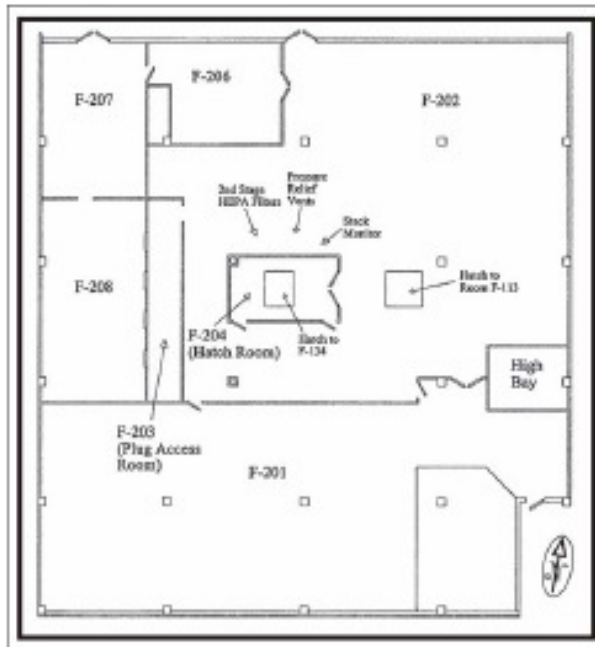


Figure 10: Detailed layout of the FSMHF second floor

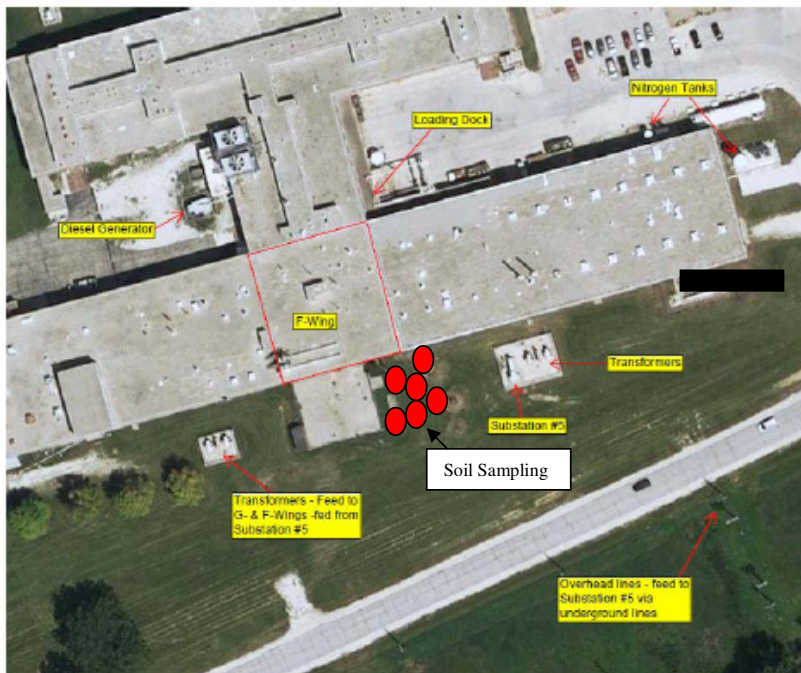
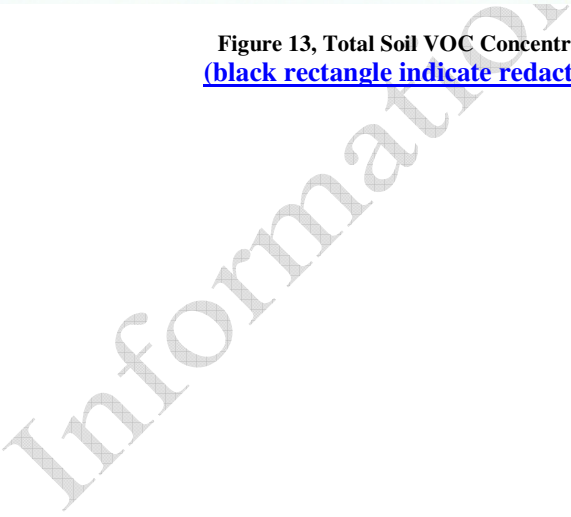


Figure 11, Examples of Support Systems outside F Wing and MRB footprint. (General sampling area marked – see narrative regarding approximate sample locations.)



Figure 12, Soil and Groundwater Sampling Locations
(black rectangles indicate redacted information)



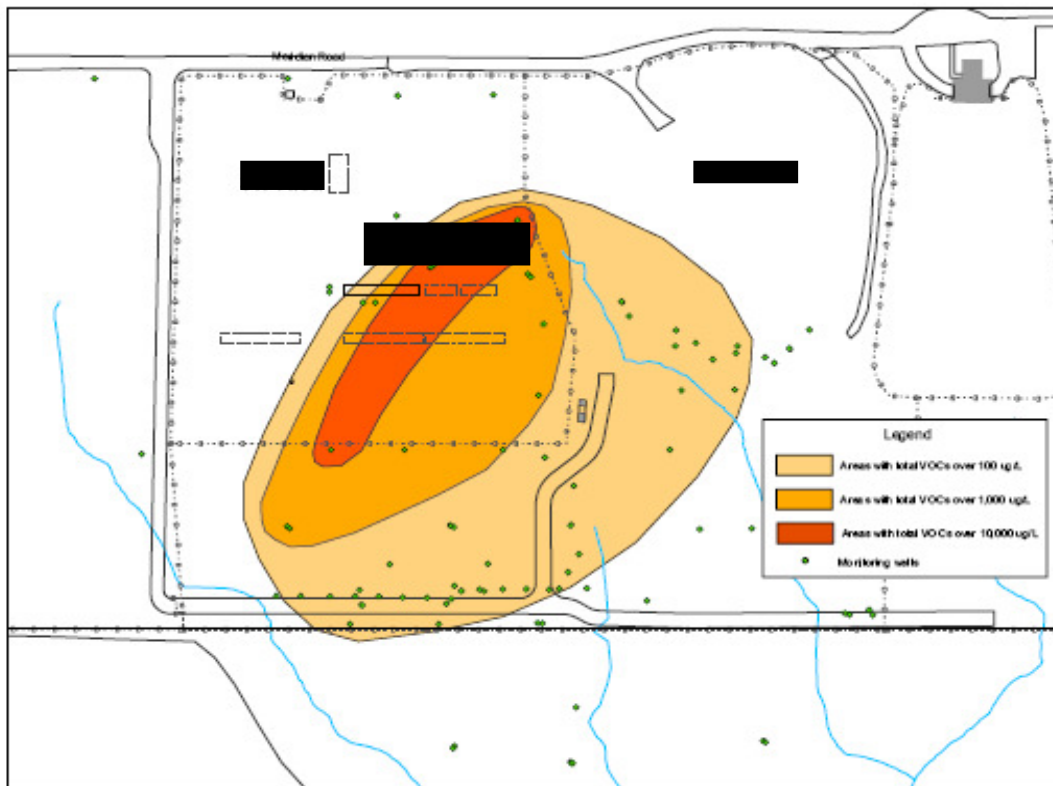


Figure14, Approximate Lateral Extent of Groundwater Contamination (area shown ~ 1400 x 800 ft.)
(black rectangles indicate redacted information)

Table 1 RATFL Weather Summary (Average)

Month	Precipitation (cm)	Temperature (Celsius)
January	5	-5
February	5	-2
March	6	3
April	8	9
May	10	14
June	9	21
July	11	23
August	11	22
September	8	18
October	8	11
November	9	4
December	5	-3
Total	95	Monthly Average 9.5

Table 2, Distance from FSMHF to Site Boundary and Nearest Resident

Direction	Distance to Site Boundary (m)	Distance to Nearest Resident (m)
N	800	2000
NNE	1000	2500
NE	1300	2000
ENE	1500	2500
E	1600	2800
ESE	1200	2500
SE	1400	3500
SSE	1400	4500
S	1500	5000
SSW	1600	5000
SW	1400	2400
WSW	1300	2300
W	1700	2200
WNW	1500	2000
NW	1300	2000
NNW	1000	2000

Table 3, Industrial Land Use Derived Soil Concentrations

Radionuclide	Industrial Land Use (pCi/g)
Americium - 241	595
Cesium - 137	30
Cobalt - 60	10.3
Plutonium - 238	818

Table 4, Maximum Concentrations of Volatile Organic Compounds (VOCs) Found in Subsurface Soil

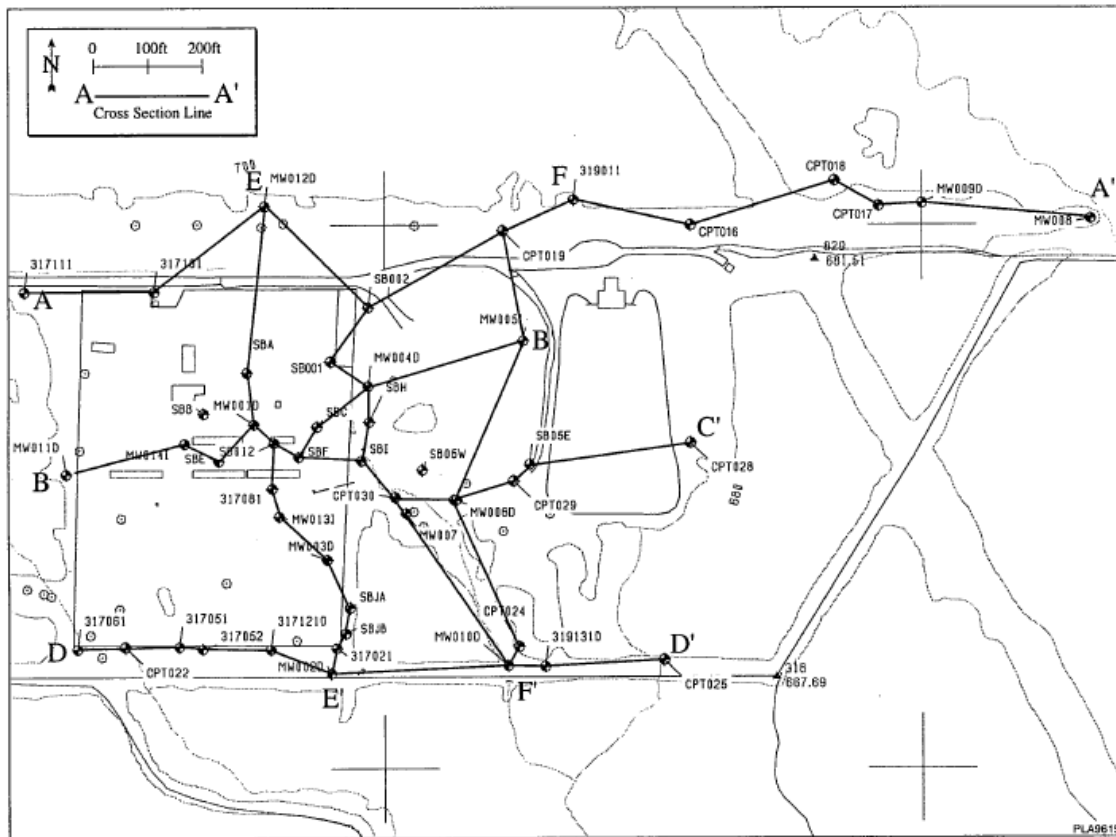
VOC	Maximum Concentration (µg/kg)	Location of Maximum Concentration (depth in ft. bgs)	Assumed Cleanup Objectives (µg/kg)
Carbon tetrachloride	70,000	SB009 (5-6)	70
Chloroform	10,000	SB009 (5-6)	540
Benzene	14,000	SB009 (5-6)	30
1,1,1-Trichloroethane	80,000	SB012 (23-24).	2,000
Methylene chloride	5,000	SB009 (5-6)	20
1,1-Dichloroethane	40,000	SB011 (12-14)	23,000
1,1-Dichloroethene	1,500	SB012 (23-24)	60
Trichloroethene	75,000	SB011 (12-14)	60
Toluene	18,000	SB010 (12-14)	12000
Chlorobenzene	3,000	SB009 (5-6)	1,000
Tetrachloroethene	90,000	SB010 (12-14)	60

Table 5, Maximum Concentrations of VOCs in Groundwater in the Source Area and at the Site Boundary

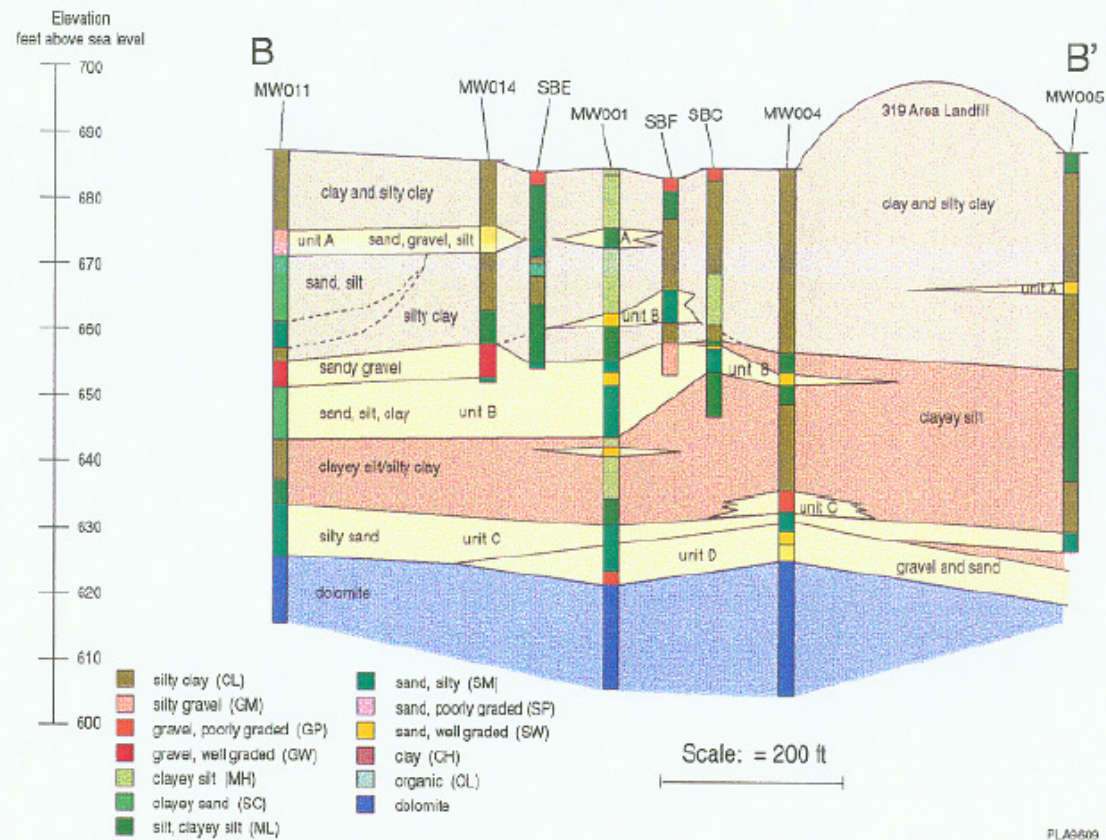
VOC	Maximum Concentration (µg/L)	Location of Maximum Concentration	Concentrations at Site Boundary Wells (“a” = MW-002) (“b” = MW317021)	Cleanup Objectives (MCLs) (µg/L)
Carbon tetrachloride	50	MW-003	8 (a & b)	5
Chloroform	100	MW-001	2 (a)	0.02
Benzene	1,000	MW-001	5 (b)	5
1,1,1-Trichloroethane	52,000	MW-001	100 (b)	200
1,1-Dichloroethane	8,000	MW-001	500 (a)	700
1,2-Dichloroethane	530	MW001	10 (b)	5
Trichloroethene	10,200	MW001	8 (b)	5
Toluene	2,060	MW001	400 (a)	1,000
Tetrachloroethene	38,000	MW001	2 (b)	5

Table 6

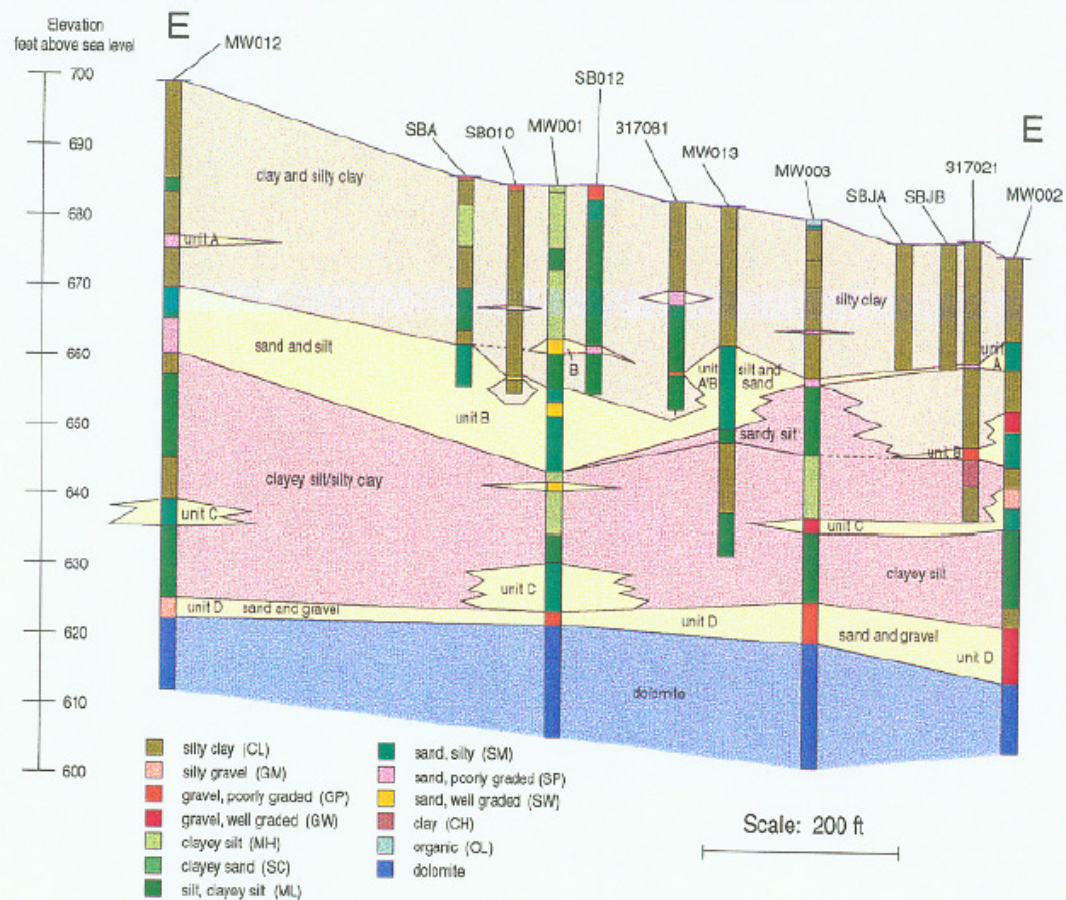
Illinois Class I Groundwater Quality Standards: Organics (concentrations in µg/L)			
Constituent	Standard	Constituent	Standard
Alachlor	2	Ethylene dibromide	0.05
Aldicarb	3	Heptachlor	0.4
Atrazine	3	Heptachlor epoxide	0.2
Benzene	5	Hexachlorocyclopentadiene	50
Benzo(a)pyrene	0.2	Lindane	0.2
Carbofuran	40	Methoxychlor	40
Carbon tetrachloride	5	Monochlorobenzene	100
Chlordane	2	PCBs (decachlorobiphenyl)	0.5
2,4-D	70	Pentachlorophenol	1
Dalapon	200	Phenols	100
1,2-Dibromo-3-chloropropane	0.2	Picloram	500
o-Dichlorobenzene	600	2,4,5-TP (Silvex)	50
p-Dichlorobenzene	75	Simazine	4
1,2-Dichloroethane	5	Styrene	100
Dichloromethane	5	Tetrachloroethylene	5
1,1-Dichloroethene	7	Toluene	1,000
cis-1,2-Dichloroethylene	70	Toxaphene	3
trans-1,2-Dichloroethylene	100	1,1,1-Trichloroethane	200
1,2-Dichloropropane	5	1,1,2-Trichloroethane	0.5
Di(2-ethylhexyl)phthalate	6	1,2,4-Trichlorobenzene	70
Dinoseb	7	Trichloroethylene	5
Endosulf	100	Vinyl chloride	2
Endrin	2	Xylenes	10,000
Ethylbenzene	700		



Supplemental Figure 1, Plot of Cross-Sections



Supplemental Figure 2, Cross-Section B - B



Supplemental Figure 3, Cross-Section E - E

NOTE: See additional as built drawings.

Informational Copy

10	CERCLA Engineering Evaluation and Cost Analysis	Sample Task Section 4.3.2	Per DOE Approved Schedule	approval	once	CERCLA Regulations and Requirements
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